

GenCore version 4.5
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OM protein - protein search, using sw model

Run on: December 26, 2001, 10:31:54 ; Search time 25.02 Seconds
(without alignments)
1385.544 Million cell updates/sec

Title: US-09-497-967-7

Perfect score: 2540

Sequence: 1 MKNNILVILISLFINQIKS.....QCDFANFLISLLISYLL 468

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 522463 seqs, 74073290 residues

Total number of hits satisfying chosen parameters: 522463

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database :

A_Geneseq_1101.*
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20: /SID88/gcgdata/geneseq/geneseq/AA1999.DAT.*
21: /SID88/gcgdata/geneseq/geneseq/AA2000.DAT.*
22: /SID88/gcgdata/geneseq/geneseq/AA2001.DAT.*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	2540	100.0	468	21	55kd i-antigen pro
2	2540	100.0	468	21	55 kDa immobilizat
3	2533	99.7	468	21	Synthetic 55kd i-a
4	921	36.3	442	21	48kd i-antigen pro
5	921	36.3	442	21	48 kDa immobilizat
6	801.5	31.6	409	21	IAG48 (G1) surface
7	424	16.7	76	21	55kd i-antigen aml
8	404	15.9	72	21	55kd i-antigen aml
9	403	15.9	71	21	55kd i-antigen aml
10	389	15.3	72	21	55kd i-antigen aml
11	375	14.8	70	21	55kd i-antigen aml

12	373	14.7	70	21	55kd i-antigen aml
13	212	8.3	72	21	48kd i-antigen re
14	203.5	8.0	1700	21	Plasmodium falcipa
15	188	7.4	1576	21	Human laminin 2 ma
16	188	7.4	1576	21	Human laminin 8 po
17	188	7.4	1584	21	Human laminin 2 ga
18	188	7.4	1609	19	Human laminin 2 ga
19	188	7.4	1609	21	Human laminin 2 ga
20	188	7.4	1609	21	Human laminin 8 po
21	188	7.4	1617	21	Human laminin 2 ga
22	185.5	7.3	1316	22	Human laminin 2 ga
23	185	7.3	399	21	Human protein sequ
24	179.5	7.1	89	21	VspAG-SI gene prod
25	179.5	7.1	1572	21	48kd i-antigen re
26	179.5	7.1	1572	21	Mouse laminin 2 ma
27	179.5	7.1	1605	21	Mouse laminin 8 po
28	179.5	7.1	1605	21	Mouse laminin 2 ga
29	179	7.0	467	21	Mouse laminin 8 po
30	178.5	6.9	1607	19	Human EGF repeat-c
31	175.5	6.9	3075	19	Mouse laminin GI c
32	173.5	6.8	963	22	Human laminin A ch
33	173.5	6.8	1027	22	Human breast-speci
34	172.5	6.8	89	21	Sequence of Crypt
35	168.5	6.6	69	21	Sequence of mouse
36	166.5	6.6	969	14	Mouse laminin 2 ma
37	166	6.5	3084	19	Mouse laminin 2 al
38	159	6.3	516	20	Human laminin 2 ma
39	159	6.3	786	15	Human laminin 2 ma
40	159	6.3	3084	10	Human breast-speci
41	158	6.2	3084	21	Sequence of Crypt
42	158	6.2	3106	21	Sequence of mouse
43	157	6.2	3088	21	Mouse laminin 2 al
44	157	6.2	3089	21	Human laminin 2 ma
45	157	6.2	3110	16	Human laminin 2 ma
					Meropsin major subu

ALIGNMENTS

RESULT 1

AA25860

ID AA25860 standard; Protein; 468 AA.

AC AA25860;

XX

XX 18-DEC-2000 (first entry)

DT

XX 55kd i-antigen protein of parasite isolate G5.

DE

XX Immobilisation antigen; i-antigen; Ichthyophthiriasis; vaccine;

KW white spot disease; freshwater fish; immune response; infection control.

KW

XX Ichthyophthirius multifiliis.

OS

XX WO200046373-A1.

PN

XX 10-AUG-2000.

PD

XX 04-FEB-2000; 2000WO-US02962.

PF

XX 04-FEB-1999; 99US-0118634.

PR

PR 02-MAR-1999; 99US-0122372.

PR

PR 17-MAR-1999; 99US-0124905.

PR

PR 27-APR-1999; 99US-0131121.

XX

XX {UYGE-} UNIV GEORGIA RES FOUND INC.

PA {CORR } CORNELL RES FOUND INC.

PA {CLAR/} CLARK T G.

PA {DICK/} DICKERSON H W.

PA {LINT/} LIN T.

XX Clark TG, Dickerson HW, Lin T;

XX

DR	WPI; 2000-506071/45.	
XX		
XX	Novel i-antigen polypeptides and polynucleotides from Ichthyophthirius	
PT	multifiliis, useful for prophylaxis and treatment of Ichthyophthirius	
PT	infection in fish	
XX		
PS	Claim 3; Figure 3; 144pp; English.	
XX		
CC	This invention relates to novel i-antigen polypeptide sequences.	
CC	I-antigens or immobilisation antigens are common to a variety of	
CC	hymenostomatid ciliates and their expression varies in response to	
CC	environmental stimuli. This invention relates to i-antigens in	
CC	Ichthyophthirius multifiliis, a protozoan which is an obligate parasite	
CC	of freshwater fish causing ichthyophthiriasis or white spot disease. The	
CC	invention includes two polypeptide and polynucleotide sequences for two	
CC	i-antigens, of 48 and 55 kD. Also included in the invention are	
CC	antibodies capable of binding to the nucleotide sequences and a method	
CC	for identifying I. multifiliis serotypes using the nucleotide sequences.	
CC	A composition (containing the i-antigen nucleotide) capable of eliciting	
CC	an immune response in fish is useful for prophylaxis, treatment or for	
CC	controlling I. multifiliis infection in fish. Polynucleotide or protein	
CC	vaccines comprising a portion of the amplified product encoding an	
CC	antigenic i-antigen polypeptide obtained is also useful for treating or	
CC	preventing I. multifiliis infection in fish. Sequences AAA97036-A97042,	
CC	and AAA97060, AAA97065 and AAA97089 represent i-antigen genes and gene	
CC	fragments identified in the invention. Sequences AAA97043-A97064	
CC	(excluding AAA97060) and AAA97071-A97088 represent primers used in the	
CC	isolation of the i-antigen gene sequences. Sequences AAB25859-B25889 and	
CC	AAB25893-B25906 represent i-antigen protein and peptide sequences.	
XX		
SQ	Sequence 468 AA;	
	Query Match 100.0%; Score 2540; DB 21; Length 468;	
	Best Local Similarity 100.0%; Pred. No. 5,8e-194;	
	Matches 468; Conservative 0; Mismatches 0; Indels 0; Gaps 0;	
QY	1 MKNILVILLISLFTNOKSANCVPVGTENTAGQVDDLTGTPANCVCNCKNFYNNAAAFV 60	
DB	1 mknllvillislftnqksancpvgteatagqvdldgtpancvncqknfynnaaafv 60	
QY	61 PGASTCTPCQKRDAGAPNPATANLVITQCNVKCPAGTATAGGATDFAAITEVCNCR 120	
DB	61 pgastctpcqkrdagapnpatanlvitqcnvkcpagtaagatdyaalitecvncr 120	
QY	121 NFYNENAPFNAGASTCTACPNRVGGALTAGNAATIVAGCNVACPTGTALDDGVTIDYV 180	
DB	121 nfyneapfnagastctacpnrvggaltagnaativaqcnvacptgtaldgvtidyy 180	
QY	181 RSFTECVKRLNFYNGNNGTFFNPGKSGQCTPCPAIKPANVAQATFLGNDATITACQNV 240	
DB	181 rsftecvkrlnfynngngtffnpgksqctpcpaikpanvaqatlgndatitaqcnva 240	
QY	241 CPDGTISAAGVNNWVAQNETCTNCAFNFNYPNAPNPNPNCSTCLCPANKDYGAETAGG 300	
DB	241 cpdgtisaagvnnwvaqnetctncapfnfnypnnpnfnpgnstclcpankdygaetagg 300	
QY	301 AATLAKOCNTACPDGTALASGATNYVLTOTELCNCAANFYFDGNFQAGSSRCKACPAK 360	
DB	301 aatlakocntacpdgtalagatnyvltqelcncanfyfdgnnfqagsrckacpank 360	
QY	361 VQAVATAGGTATLIAQCALECPAGTVLTDGTTSTYKQAASECVCKAANFYTKQTDWVA 420	
DB	361 vqavataggtatliaqcalecpagtvlttgttstykaasecvckaanytktdwva 420	
QY	421 GIDTCTSCNKLISGAEANIPESAKNKIQDFANFLISILLISYLL 468	
DB	421 gidtctscnkltsgaeanipesaknkigcdfanflisilllsyyl 468	
RESULT 2		
AA97177		
ID	AA97177 standard; Protein: 468 AA.	

Query Match 100.0%; Score 2540; DB 21; Length 468;
 Best Local Similarity 100.0%; Pred. No. 5.8e-194;
 Matches 468; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 MKNNTLVILISLFINQIKSANCPCVGTETTAGQVDDLGTPANCVCNCKNFYNNAAAFV 60
 DB 1 mknntlvilislfinqiksancpcvgtettagqvdldgtpancvcncnkfnynnaaafv 60

QY 61 PCASCTCPCKQKDGAGQPNPPTANLVTCNVKCPAGTAAGATDYAAIITECVNCRI 120
 DB 61 p9astctcpckkdagagpnpptanilvtqcnvkcpagtaagatdyaaalitecvncr1 120

QY 121 NFYNENAPNFNAGASTCTACPDVNRVGGALTAGNAATVAOCNVACPTGTALDDGVTTDYV 180
 DB 121 nfyenapnfnagastctacpdvnrvggaltagnaatvaocnvacptgtalddgvttdyv 180

QY 181 RSFTECVKCRNFYNNNGNNTFPNPKSQCTPCPAIKPANVAQATLGNDATITACQNV 240
 DB 181 rsftecvkcrlnfyngngntfpnpksqctpcpaikpanvaqatlgndatitaqcnva 240

QY 241 CPDGTISAAGVNNWVAQNTCTCAPNFYNNAPNPNPNCSTCLPCPANKDYGAETAGG 300
 DB 241 cpdgtisaagvnnwvaqntctcapnfynnpnpnstclpcpankdygaetagg 300

QY 301 AATLAKQCNIACPDGTATIAQCALECPAGTVLTDGTTSTYKQAASECVKCAANFYTTKTQDWA 420
 DB 301 aatlakqcniaacpdgtatliaqcalecpagtvltldgttstykqaasecvkcaanfyttktqdwa 420

QY 421 GIDTCTSCNKKLTSGAEANLPESAKNKIQCDNFANFLSISLLISYLL 468
 DB 421 gidtctscnkkltsgaeanlpesaknkigcdfnanflisllisyyll 468

RESULT 3
 AAB25882
 ID AAB25882 standard; Protein; 468 AA.

XX AC AAB25882;
 XX DT 18-DEC-2000 (first entry)
 XX DE Synthetic 55kd i-antigen protein L6P.
 XX KW Immobilisation antigen; i-antigen; ichthyophthiriasis; vaccine;
 XX KW white spot disease; freshwater fish; immune response; infection control.
 XX OS Ichthyophthirius multifiliis.
 XX OS Synthetic.
 XX PN WO200046373-A1.
 XX PD 10-AUG-2000.
 XX PF 04-FEB-2000; 2000WO-US02962.
 XX PR 04-FEB-1999; 99US-0118634.
 XX PR 02-MAR-1999; 99US-0122372.
 XX PR 17-MAR-1999; 99US-0124905.
 XX PR 27-APR-1999; 99US-0131121.
 XX PA (UYGB-) UNIV GEORGIA RES FOUND INC.
 XX PA (CORR) CORNELL RES FOUND INC.
 XX PA (CLAR/) CLARK T G.
 XX PA (DICK/) DICKERSON H W.
 XX PA (LINT/) LIN T.
 XX PI Clark TG, Dickerson HW, Lin T;

XX DR WPI; 2000-506071/45.
 XX PT Novel i-antigen polypeptides and polynucleotides from Ichthyophthirius
 PT multifiliis, useful for prophylaxis and treatment of Ichthyophthirius
 PS infection in fish -
 XX Example 5; Figure 14; 144pp; English.
 XX This invention relates to novel i-antigen polypeptide sequences.
 CC I-antigens or immobilisation antigens are common to a variety of
 CC hymenostomatid ciliates and their expression varies in response to
 CC environmental stimuli. This invention relates to i-antigens in
 CC Ichthyophthirius multifiliis, a protozoan which is an obligate parasite
 CC of freshwater fish causing ichthyophthiriasis or white spot disease. The
 CC invention includes two polypeptide and polynucleotide sequences for two
 CC i-antigens, of 48 and 55 kD. Also included in the invention are
 CC antibodies capable of binding to the nucleotide sequences and a method
 CC for identifying i. multifiliis serotypes using the nucleotide sequences.
 CC A composition (containing the i-antigen nucleotide) capable of eliciting
 CC an immune response in fish is useful for prophylaxis, treatment or for
 CC controlling i. multifiliis infection in fish. Polynucleotide or protein
 CC vaccines comprising a portion of the amplified product encoding an
 CC antigenic i-antigen polypeptide obtained is also useful for treating or
 CC preventing i. multifiliis infection in fish. Sequences AAA97036-A97042,
 CC and AAA97060, AAA97065 and AAA97089 represent i-antigen genes and gene
 CC fragments identified in the invention. Sequences AAA97043-A97064
 CC (excluding AAA97060) and AAA97071-A97088 represent primers used in the
 CC isolation of the i-antigen gene sequences. Sequences AAB25859-B25889 and
 CC AAB25893-B25906 represent i-antigen protein and peptide sequences.
 XX SQ Sequence 468 AA;

Query Match 99.7%; Score 2533; DB 21; Length 468;
 Best Local Similarity 99.8%; Pred. No. 2.1e-193;
 Matches 467; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

QY 1 MKNNTLVILISLFINQIKSANCPCVGTETTAGQVDDLGTPANCVCNCKNFYNNAAAFV 60
 DB 1 mknntlvilislfinqiksancpcvgtettagqvdldgtpancvcncnkfnynnaaafv 60

QY 61 PGASTCTCPCKQKDGAGQPNPPTANLVTCNVKCPAGTAAGATDYAAIITECVNCRI 120
 DB 61 p9astctcpckkdagagpnpptanilvtqcnvkcpagtaagatdyaaalitecvncr1 120

QY 121 NFYNENAPNFNAGASTCTACPDVNRVGGALTAGNAATVAOCNVACPTGTALDDGVTTDYV 180
 DB 121 nfyenapnfnagastctacpdvnrvggaltagnaatvaocnvacptgtalddgvttdyv 180

QY 181 RSFTECVKCRNFYNNNGNNTFPNPKSQCTPCPAIKPANVAQATLGNDATITACQNV 240
 DB 181 rsftecvkcrlnfyngngntfpnpksqctpcpaikpanvaqatlgndatitaqcnva 240

QY 241 CPDGTISAAGVNNWVAQNTCTCAPNFYNNAPNPNPNCSTCLPCPANKDYGAETAGG 300
 DB 241 cpdgtisaagvnnwvaqntctcapnfynnpnpnstclpcpankdygaetagg 300

QY 301 AATLAKQCNIACPDGTATIAQCALECPAGTVLTDGTTSTYKQAASECVKCAANFYTTKTQDWA 420
 DB 301 aatlakqcniaacpdgtatliaqcalecpagtvltldgttstykqaasecvkcaanfyttktqdwa 420

QY 421 GIDTCTSCNKKLTSGAEANLPESAKNKIQCDNFANFLSISLLISYLL 468
 DB 421 gidtctscnkkltsgaeanlpesaknkigcdfnanflisllisyyll 468

RESULT 4
 AAB25859

D	AAB25859 standard; Protein; 442 AA.
X	
X	AAB25859;
C	
X	18-DEC-2000 (first entry)
T	
T	48kD i-antigen protein sequence.
X	
E	Immobilisation antigen; i-antigen; ichthyophthiriasis; vaccine;
X	white spot disease; freshwater fish; immune response; infection control.
W	
X	Ichthyophthirius multifiliis.
S	
X	WO200046373-A1.
N	
X	10-AUG-2000.
D	
X	04-FEB-2000; 2000WO-US02962.
P	
F	04-FEB-1999; 99US-0118634.
X	
RR	02-MAR-1999; 99US-0122372.
RR	17-MAR-1999; 99US-0124905.
RR	27-APR-1999; 99US-0131121.
RR	
XX	(UYGE-) UNIV GEORGIA RES FOUND INC.
XX	(CORR) CORNELL RES FOUND INC.
PA	(CLAR/) CLARK T G.
PA	(DICK/) DICKERSON H W.
PA	(LINT/) LIN T.
PA	
XX	

WPT; 2000-506071/45.

Novel i-antigen polypeptides and polynucleotides from *Ichthyophthirius multifiliis*, useful for prophylaxis and treatment of *Ichthyophthirius* infection in fish -

Claim 1; Figure 1; 144pp; English.

This invention relates to novel i-antigen polypeptide sequences. I-antigens or immobilisation antigens are common to a variety of hymenostomatid ciliates and their expression varies in response to environmental stimuli. This invention relates to i-antigens in *Ichthyophthirius multifiliis*, a protozoan which is an obligate parasite of freshwater fish causing ichthyophthiriasis or white spot disease. The invention includes two polypeptide and polynucleotide sequences for two i-antigens, of 48 and 55 kD. Also included in the invention are antibodies capable of binding to the nucleotide sequences and a method for identifying *I. multifiliis* serotypes using the nucleotide sequences. A composition (containing the i-antigen nucleotide) capable of eliciting an immune response in fish is useful for prophylaxis, treatment or for controlling *I. multifiliis* infection in fish. Polynucleotide or protein vaccines comprising a portion of the amplified product encoding an antigenic i-antigen polypeptide obtained is also useful for treating or preventing *I. multifiliis* infection in fish. Sequences AAA97036-A97042, and AAA97060, AAA97065 and AAA97089 represent i-antigen genes and gene fragments identified in the invention. Sequences AAA97043-A97064 (excluding AAA97060) and AAA97071-A97088 represent primers used in the isolation of the i-antigen gene sequences. Sequences AAB25859-B25889 and AAB25893-B25906 represent i-antigen protein and peptide sequences.

Sequence 442 AA;

Query Match 36.3%; Score 921; DB 21; Length 442;
Best Local Similarity 41.8%; Pred. No. 3.4e-65;
Matches 214; Conservative 45; Mismatches 139; Indels 114; Gaps

1 MKNNTLVILITSLFNQJLKSANCPVGTETNAGQVD----DLGTTPANCNCQKNEYNNNA 56
1 mkynllvllitlslfnlqjllksanlcpvgtdgtqta-gltdvgaaadlgt--cvcnrcnrfyngg 56

(UYGE-) UNIV GEORGIA RES FOUND INC.
PA
PA (GAER/) GAERTIG J.
PA (GAER/) DICKERSON H W.
PA (DICK/) CLARK T G.
PA (CLAR/) Gaertig J, Dickerson HW, Clark TG;
XX
PI
XX
XX
XX WPI; 2000-514962/46.


```
Query Match          31.6%; Score 801.5; DB 21; Length 409;
Best Local Similarity 39.5%; Pred. No. 9,7e-56;
Matches 187; Conservative 39; Mismatches 137; Indels 111; Gaps 18;

QY 23 CPVGTETNTAGQVD---DLGTPANCVCNCKNFYNNAAAFVPGASTCTCPQKQKDAQAQ 78
   ||||| ||| ||| ||||| ||||| |||
Db 4 cpdgtqtq-agldvgaadlgt---cvcrcpnyfynggaa-----qgean 44
   ||||| ||| ||| ||||| ||||| |||

QY 79 PNPATANLVTCQNVKCPAGTATAGATDYAALITECVNCRINFYNNENAPNFNAGASTCT 138
   ||||| ||| ||| ||||| ||||| |||
Db 45 gndqfaan-----naarglc 60

QY 139 ACQVNRVGGALTAGNAATIAVCNVCAPCTGALDDGVTDDYVRSFTECVKRLNFYNGN 198
   ||||| ||| ||| ||||| ||||| |||
Db 61 pcqinrvsgvtnagdlatlacstcptgtaldgvtgdfdrsaacqvkckpnyfyngg 120

QY 199 N-GNTP-----FNPG-----KSCQTPCPAIPKPNVAQAATLGNDAITIAQCNCVACPD 243
   ||||| ||| ||| ||||| ||||| |||
Db 121 spqgeapgvqvfaagaaagvaavtsqvcpcqlnk--ndspatagaqanlatqcsnqcpt 178

QY 244 GTISAACVNNWVAQNTPE---CTNCAPNFYNN-----NAPN---FNPG-----NST 282
   ||||| ||| ||| ||||| ||||| |||
Db 179 gtvlldgvt--lvfnfsatlcvcrcpnyfyngsgpgeapgvqvfaagaaagvaavtsq 236

QY 283 CLPCPANKDYGAETAGGAATLAKQCNIAICPDGTATIASGAT-NYVILQTECLNCAANFYF 341
   ||||| ||| ||| ||||| ||||| |||
Db 237 cvpcqinkn--dspatagaqanlatqcsqtcptgtalqdgvtlvfnsnstqcsqcianyff 295

QY 342 DGNMFQAGSSRCRACCPANKVOGAVATAGGTATLIIAOCALCECPAGTVLTGCTTSTYKQAS 401
   ||||| ||| ||| ||||| ||||| |||
Db 296 ng-nfeagksqclkcpcvsktppaha-pgntatqatqcltctpagtvlldgtsntfnvasat 353

QY 402 ECVKCAANFYTTKOTDWAQIDCTSCNKLTSAGANLPESAKKNIOCDFANF 455
   ||||| ||| ||| ||||| ||||| |||
Db 354 ectcksagffaskttgtgtgtdtctectkkltsगतककययाeatqkvqcasttf 407

RESULT 7
AAB25885
ID AAB25885 standard; Peptide; 76 AA.
XX AC
XX AAB25885;
XX 18-DEC-2000 (first entry)
XX 55kd i-antigen amino acid repeat sequence SEQ ID 57.
XX Immobilisation antigen; i-antigen; ichtyophthiriasis; vaccine;
XX white spot disease; freshwater fish; immune response; infection control.
XX Ichthyophthirius multifiliis.
XX WO2000046373-A1.
XX 10-AUG-2000.
XX 04-FEB-2000; 2000WO-US02962.
XX 04-FEB-1999; 99US-0118634.
XX 02-MAR-1999; 99US-0122372.
XX 17-MAR-1999; 99US-0124905.
XX 27-APR-1999; 99US-0131121.
XX (UYGE-) UNIV GEORGIA RES FOUND INC.
XX (CORR ) CORNELL RES FOUND INC.
XX (CLARK/) CLARK T G.
XX (DICK/) DICKERSON H W.
XX (LINT/) LIN T.
XX Clark TG, Dickerson HW, Lin T;
XX WPI; 2000-506071/45.
XX
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```
PT Novel i-antigen polypeptides and polynucleotides from Ichthyophthirius
PT multifiliis, useful for prophylaxis and treatment of Ichthyophthirius
PT infection in fish -
XX Disclosure; Figure 5b; 144pp; English.
XX This invention relates to novel i-antigen polypeptide sequences.
XX I-antigens or immobilisation antigens are common to a variety of
XX hymenostomatid ciliates and their expression varies in response to
XX environmental stimuli. This invention relates to i-antigens in
XX Ichthyophthirius multifiliis, a protozoan which is an obligate parasite
XX of freshwater fish causing ichthyophthiriasis or white spot disease. The
XX invention includes two polypeptide and polynucleotide sequences for two
XX i-antigens, of 48 and 55 kD. Also included in the invention are
XX antibodies capable of binding to the nucleotide sequences and a method
XX for identifying I. multifiliis serotypes using the nucleotide sequences.
XX A composition (containing the i-antigen nucleotide) capable of eliciting
XX an immune response in fish is useful for prophylaxis, treatment or for
XX controlling I. multifiliis infection in fish. Polynucleotide or protein
XX vaccines comprising a portion of the amplified product encoding an
XX antigenic i-antigen polypeptide obtained is also useful for treating or
XX preventing I. multifiliis infection in fish. Sequences AAA97036-A97042,
XX and AAA97060, AAA97065 and AAA97089 represent i-antigen genes and gene
XX fragments identified in the invention. Sequences AAA97043-A97064
XX (excluding AAA97060) and AAA97071-A97088 represent primers used in the
XX isolation of the i-antigen gene sequences. Sequences AAB25859-B25889 and
XX AAB25893-B25906 represent i-antigen protein and peptide sequences.
SQ Sequence 76 AA;

Query Match          16.7%; Score 424; DB 21; Length 76;
Best Local Similarity 100.0%; Pred. No. 1.1e-26;
Matches 76; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 165 CPTGTALDDGVTDDYVRSFTECVKRLNFYNGNNTFNPGRSQCTPCPAIKPANVAQ 224
   ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| |||||
Db 1 cptgtalddgvtddyvrstecvkrlnfyngnngntcfnpgrpksqctpcpaikpanvaq 60

QY 225 ATLGNDATITACQNV 240
   ||||| ||||| ||||| |||||
Db 61 atlgndatitaqcnva 76

RESULT 8
AAB25883
ID AAB25883 standard; Peptide; 72 AA.
XX AC
XX AAB25883;
XX 18-DEC-2000 (first entry)
XX 55kd i-antigen amino acid repeat sequence SEQ ID 55.
XX Immobilisation antigen; i-antigen; ichtyophthiriasis; vaccine;
XX white spot disease; freshwater fish; immune response; infection control.
XX Ichthyophthirius multifiliis.
XX WO2000046373-A1.
XX 10-AUG-2000.
XX 04-FEB-2000; 2000WO-US02962.
XX 04-FEB-1999; 99US-0118634.
XX 02-MAR-1999; 99US-0122372.
XX 17-MAR-1999; 99US-0124905.
XX 27-APR-1999; 99US-0131121.
XX (UYGE-) UNIV GEORGIA RES FOUND INC.
XX (CORR ) CORNELL RES FOUND INC.
XX (CLARK/) CLARK T G.
```

PA (DICK/) DICKERSON H W.
 PA (LINT/) LIN T.
 PI Clark TG, Dickerson HW, Lin T;
 XX WPI; 2000-506071/45.
 DR Novel i-antigen polypeptides and polynucleotides from Ichthyophthirius
 XX multililiis, useful for prophylaxis and treatment of Ichthyophthirius
 PT infection in fish -
 PT Disclosure; Figure 5b; 144pp; English.
 PS This invention relates to novel i-antigen polypeptide sequences.
 XX I-antigens or immobilisation antigens are common to a variety of
 CC hymenostomatid ciliates and their expression varies in response to
 CC environmental stimuli. This invention relates to i-antigens in
 CC Ichthyophthirius multililiis, a protozoan which is an obligate parasite
 CC of freshwater fish causing ichthyophthiriasis or white spot disease. The
 CC invention includes two polypeptide and polynucleotide sequences for two
 CC i-antigens, of 48 and 55 kD. Also included in the invention are
 CC antibodies capable of binding to the nucleotide sequences and a method
 CC for identifying i. multililiis serotypes using the nucleotide sequences.
 CC A composition (containing the i-antigen nucleotide) capable of eliciting
 CC an immune response in fish is useful for prophylaxis, treatment or for
 CC vaccines comprising a portion of the amplified product encoding an
 CC antigenic i-antigen polypeptide obtained in fish. Polynucleotide or protein
 CC preventing i. multililiis infection in fish. Sequences AAA97036-A97042,
 CC and AAA97060, AAA97065 and AAA97089 represent i-antigen genes and gene
 CC fragments identified in the invention. Sequences AAA97043-A97064
 CC (excluding AAA97060) and AAA97071-A97088 represent primers used in the
 CC isolation of the i-antigen gene sequences. Sequences AAB25859-B25889 and
 CC AAB25893-B25906 represent i-antigen protein and peptide sequences.
 XX Sequence 72 AA:
 SQ
 Query Match 15.9%; Score 404; DB 21; Length 72;
 Best Local Similarity 100.0%; Pred. No. 4.1e-25;
 Matches 72; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 23 CPVGTETNTAGQVDLGTTPANCVNCQKNFYNNAAAFVPGASTCTPCPKKDGAGQPNPP 82
 Db 1 cpvgtetntaagvdldgtppancvncqknfyynnaaafvpgastctpcpkkdgagqpnpp 60
 QY 83 ATANLVTCNVK 94
 Db 61 atanlvtcnvk 72
 RESULT 9
 AAB25886 ID AAB25886 standard; Peptide; 71 AA.
 XX AAB25886;
 AC AAB25886;
 DT 18-DEC-2000 (first entry)
 XX 55kD i-antigen amino acid repeat sequence SEQ ID 58.
 DE Immobilisation antigen; i-antigen; Ichthyophthiriasis; vaccine;
 XX white spot disease; freshwater fish; immune response; infection control.
 KW Ichthyophthirius multililiis.
 OS WO200046373-A1.
 XX 10-AUG-2000.
 XX 04-FEB-2000; 2000WO-US02962.
 XX 04-FEB-1999; 99US-0118634.

PR 02-MAR-1999; 99US-0122372.
 PR 17-MAR-1999; 99US-0124905.
 PR 27-APR-1999; 99US-0131121.
 XX (UYGE-) UNIV GEORGIA RES FOUND INC.
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 PA (CLAR/) CLARK T G.
 PA (DICK/) DICKERSON H W.
 PA (LINT/) LIN T.
 XX Clark TG, Dickerson HW, Lin T;
 XX WPI; 2000-506071/45.
 DR Novel i-antigen polypeptides and polynucleotides from Ichthyophthirius
 XX multililiis, useful for prophylaxis and treatment of Ichthyophthirius
 PT infection in fish -
 PT Disclosure; Figure 5b; 144pp; English.
 PS This invention relates to novel i-antigen polypeptide sequences.
 XX I-antigens or immobilisation antigens are common to a variety of
 CC hymenostomatid ciliates and their expression varies in response to
 CC environmental stimuli. This invention relates to i-antigens in
 CC Ichthyophthirius multililiis, a protozoan which is an obligate parasite
 CC of freshwater fish causing ichthyophthiriasis or white spot disease. The
 CC invention includes two polypeptide and polynucleotide sequences for two
 CC i-antigens, of 48 and 55 kD. Also included in the invention are
 CC antibodies capable of binding to the nucleotide sequences and a method
 CC for identifying i. multililiis serotypes using the nucleotide sequences.
 CC A composition (containing the i-antigen nucleotide) capable of eliciting
 CC an immune response in fish is useful for prophylaxis, treatment or for
 CC vaccines comprising a portion of the amplified product encoding an
 CC antigenic i-antigen polypeptide obtained in fish. Polynucleotide or protein
 CC preventing i. multililiis infection in fish. Sequences AAA97036-A97042,
 CC and AAA97060, AAA97065 and AAA97089 represent i-antigen genes and gene
 CC fragments identified in the invention. Sequences AAA97043-A97064
 CC (excluding AAA97060) and AAA97071-A97088 represent primers used in the
 CC isolation of the i-antigen gene sequences. Sequences AAB25859-B25889 and
 CC AAB25893-B25906 represent i-antigen protein and peptide sequences.
 XX Sequence 71 AA:
 SQ
 Query Match 15.9%; Score 403; DB 21; Length 71;
 Best Local Similarity 100.0%; Pred. No. 4.8e-25;
 Matches 71; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 241 CPDGTISAAGYNNWVAQNTCTNCAPNFYNNAPNPGNSTCLPCPANKDYGAETAGG 300
 Db 1 cpdgtisaagynnwvaqntctncapnfynnapnpgnstclpcpankdygaetagg 60
 QY 301 AATLAKOCNTA 311
 Db 61 aatlakocnta 71
 RESULT 10
 AAB25888 ID AAB25888 standard; Peptide; 72 AA.
 XX AAB25888;
 AC AAB25888;
 DT 18-DEC-2000 (first entry)
 XX 55kD i-antigen amino acid repeat sequence SEQ ID 60.
 DE Immobilisation antigen; i-antigen; Ichthyophthiriasis; vaccine;
 XX white spot disease; freshwater fish; immune response; infection control.
 KW Ichthyophthirius multililiis.
 OS

PN WO200046373-A1.
XX 10-AUG-2000.
XX 04-FEB-2000; 2000WO-US02962.
XX 04-FEB-1999; 99US-0118634.
PR 02-MAR-1999; 99US-0122372.
PR 17-MAR-1999; 99US-0124905.
PR 27-APR-1999; 99US-0131121.
XX (UYGE-) UNIV GEORGIA RES FOUND INC.
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PA (CLAR/) CLARK T G.
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PA (LINT/) LIN T.
XX Clark TG, Dickerson HW, Lin T;
PI WPI; 2000-506071/45.
XX Novel i-antigen polypeptides and polynucleotides from Ichthyophthirius
XX multifiliis, useful for prophylaxis and treatment of Ichthyophthirius
XX infection in fish -
XX Disclosure; Figure 5b; 144pp; English.
XX This invention relates to novel i-antigen polypeptide sequences.
XX I-antigens or immobilisation antigens are common to a variety of
XX hymenostomatid ciliates and their expression varies in response to
XX environmental stimuli. This invention relates to i-antigens in
XX Ichthyophthirius multifiliis, a protozoan which is an obligate parasite
XX of freshwater fish causing ichthyophthiriasis or white spot disease. The
XX invention includes two polypeptide and polynucleotide sequences for two
XX i-antigens, of 48 and 55 kD. Also included in the invention are
XX antibodies capable of binding to the nucleotide sequences and a method
XX for identifying I. multifiliis serotypes using the nucleotide sequences.
XX A composition (containing the i-antigen nucleotide) capable of eliciting
XX an immune response in fish is useful for prophylaxis, treatment or for
XX controlling I. multifiliis infection in fish. Polynucleotide or protein
XX vaccines comprising a portion of the amplified product encoding an
XX antigenic i-antigen polypeptide obtained in fish. Sequences AAA97036-A97042,
XX and AAA97060, AAA97065 and AAA97089 represent i-antigen genes and gene
XX fragments identified in the invention. Sequences AAA97043-A97064
XX (excluding AAA97060) and AAA97071-A97088 represent primers used in the
XX isolation of the i-antigen gene sequences. Sequences AAB25859-B25889 and
XX AAB25893-B25906 represent i-antigen protein and peptide sequences.
XX Sequence 72 AA;
SQ
Query Match 15.3%; Score 389; DB 21; Length 72;
Best Local Similarity 100.0%; Pred. No. 6.4e-24;
Matches 72; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 382 CPAGTVLTDGTTSTYKQAASCEVCVKAANFYTTKTQTDWVAGIDTCTSCNKKLTSGAENLP 441
Db 1 cpagtvldgtstsykqaasecvkcaanfyttktqtdwvagitctscnkkltsgaenlp 60
QY 442 ESAKNIQCDA 453
Db 61 esakniqcda 72
RESULT 11
ID AAB25884 standard; Peptide; 70 AA.
XX AAB25884;
XX AAB25884;
XX 18-DEC-2000 (first entry)
XX

DE 55kD i-antigen amino acid repeat sequence SEQ ID 56.
XX Immobilisation antigen; i-antigen; ichthyophthiriasis; vaccine;
KW white spot disease; freshwater fish; immune response; infection control.
XX Ichthyophthirius multifiliis.
XX WO200046373-A1.
PN 10-AUG-2000.
XX 04-FEB-2000; 2000WO-US02962.
XX 04-FEB-1999; 99US-0118634.
PR 02-MAR-1999; 99US-0122372.
PR 17-MAR-1999; 99US-0124905.
PR 27-APR-1999; 99US-0131121.
XX (UYGE-) UNIV GEORGIA RES FOUND INC.
PA (CORR) CORNELL RES FOUND INC.
PA (CLAR/) CLARK T G.
PA (DICK/) DICKERSON H W.
PA (LINT/) LIN T.
XX Clark TG, Dickerson HW, Lin T;
PI WPI; 2000-506071/45.
XX Novel i-antigen polypeptides and polynucleotides from Ichthyophthirius
XX multifiliis, useful for prophylaxis and treatment of Ichthyophthirius
XX infection in fish -
XX Disclosure; Figure 5b; 144pp; English.
XX This invention relates to novel i-antigen polypeptide sequences.
XX I-antigens or immobilisation antigens are common to a variety of
XX hymenostomatid ciliates and their expression varies in response to
XX environmental stimuli. This invention relates to i-antigens in
XX Ichthyophthirius multifiliis, a protozoan which is an obligate parasite
XX of freshwater fish causing ichthyophthiriasis or white spot disease. The
XX invention includes two polypeptide and polynucleotide sequences for two
XX i-antigens, of 48 and 55 kD. Also included in the invention are
XX antibodies capable of binding to the nucleotide sequences and a method
XX for identifying I. multifiliis serotypes using the nucleotide sequences.
XX A composition (containing the i-antigen nucleotide) capable of eliciting
XX an immune response in fish is useful for prophylaxis, treatment or for
XX controlling I. multifiliis infection in fish. Polynucleotide or protein
XX vaccines comprising a portion of the amplified product encoding an
XX antigenic i-antigen polypeptide obtained in fish. Sequences AAA97036-A97042,
XX and AAA97060, AAA97065 and AAA97089 represent i-antigen genes and gene
XX fragments identified in the invention. Sequences AAA97043-A97064
XX (excluding AAA97060) and AAA97071-A97088 represent primers used in the
XX isolation of the i-antigen gene sequences. Sequences AAB25859-B25889 and
XX AAB25893-B25906 represent i-antigen protein and peptide sequences.
XX Sequence 70 AA;
SQ
Query Match 14.8%; Score 375; DB 21; Length 70;
Best Local Similarity 100.0%; Pred. No. 8e-23;
Matches 70; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 95 CPAGTAIAGGATDYAAIITECVNCRINFYNENAPNFNAGASTCTCTACPNRVGALTAGNA 154
Db 1 cpagtaiaaggatdyaaitecvncrinfynenapnfnagastctctacpnrvgaltagna 60
QY 155 ATVAQCENVA 164
Db 61 ativagcnva 70
RESULT 12

AAB25887
ID AAB25887 standard; Peptide; 70 AA.

AC AAB25887;

DT 18-DEC-2000 (first entry)

DE 55kd i-antigen amino acid repeat sequence SEQ ID 59.

KW Immobilisation antigen; i-antigen; ichthyophthiriasis; vaccine;
white spot disease; freshwater fish; immune response; infection control.

OS Ichthyophthirius multifiliis.

PN WO200046373-A1.

PD 10-AUG-2000.

PF 04-FEB-2000; 2000WO-US02962.

PR 04-FEB-1999; 99US-0118634.

PR 02-MAR-1999; 99US-0122372.

PR 17-MAR-1999; 99US-0124905.

PR 27-APR-1999; 99US-0131121.

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PA (CLARK/) CLARK T G.

PA (DICK/) DICKERSON H W.

PA (LINT/) LIN T.

PI Clark TG, Dickerson HW, Lin T;

PS WPI; 2000-506071/45.
Disclosure; Figure 5b; 144pp; English.

This invention relates to novel i-antigen polypeptide sequences. I-antigens or immobilisation antigens are common to a variety of hymenostomatid ciliates and their expression varies in response to environmental stimuli. This invention relates to i-antigens in Ichthyophthirius multifiliis, a protozoan which is an obligate parasite of freshwater fish causing ichthyophthiriasis or white spot disease. The invention includes two polypeptide and polynucleotide sequences for two i-antigens, of 48 and 55 kd. Also included in the invention are antibodies capable of binding to the nucleotide sequences and a method for identifying I. multifiliis serotypes using the nucleotide sequences. A composition (containing the i-antigen nucleotide) capable of eliciting an immune response in fish is useful for prophylaxis, treatment or for controlling I. multifiliis infection in fish. Polynucleotide or protein vaccines comprising a portion of the amplified product encoding an antigenic i-antigen polypeptide obtained is also useful for treating or preventing I. multifiliis infection in fish. Sequences AAA97036-A97042, and AAA97060, AAA97065 and AAA97089 represent i-antigen genes and gene fragments identified in the invention. Sequences AAA97043-A97064 (excluding AAA97060) and AAA97071-A97088 represent primers used in the isolation of the i-antigen gene sequences. Sequences AAB25859-B25889 and AAB25893-B25906 represent i-antigen protein and peptide sequences.

Sequence 70 AA;

Query Match 14.7%; Score 373; DB 21; Length 70;
Best Local Similarity 100.0%; Pred. No. 1.2e-22;
Matches 70; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 312 CPDGTATASGATNVVILQTECLNCAANFYDGNFQAGSSRCACPANKVQGVATAGGT 371
|||||
DB 1 cpdgtatlasgathvllqtclncaanfydgnfnfagssrcackpankvqgvataggt 60

QY 372 ATLIAQCALE 381
|||||
DB 61 atliaqcale 70

RESULT 13

AAB25865

ID AAB25865 standard; Protein; 72 AA.

XX AC AAB25865;

DT 18-DEC-2000 (first entry)

DE 48kd i-antigen repeat amino acid sequence SEQ ID 12.

KW Immobilisation antigen; i-antigen; ichthyophthiriasis; vaccine;
white spot disease; freshwater fish; immune response; infection control.

OS Ichthyophthirius multifiliis.

PN WO200046373-A1.

PD 10-AUG-2000.

PF 04-FEB-2000; 2000WO-US02962.

PR 04-FEB-1999; 99US-0118634.

PR 02-MAR-1999; 99US-0122372.

PR 17-MAR-1999; 99US-0124905.

PR 27-APR-1999; 99US-0131121.

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PA (CORR) CORNELL RES FOUND INC.

PA (CLARK/) CLARK T G.

PA (DICK/) DICKERSON H W.

PA (LINT/) LIN T.

PI Clark TG, Dickerson HW, Lin T;

PS WPI; 2000-506071/45.

Novel i-antigen polypeptides and polynucleotides from Ichthyophthirius multifiliis, useful for prophylaxis and treatment of Ichthyophthirius infection in fish -

Disclosure; Figure 5a; 144pp; English.

This invention relates to novel i-antigen polypeptide sequences. I-antigens or immobilisation antigens are common to a variety of hymenostomatid ciliates and their expression varies in response to environmental stimuli. This invention relates to i-antigens in Ichthyophthirius multifiliis, a protozoan which is an obligate parasite of freshwater fish causing ichthyophthiriasis or white spot disease. The invention includes two polypeptide and polynucleotide sequences for two i-antigens, of 48 and 55 kd. Also included in the invention are antibodies capable of binding to the nucleotide sequences and a method for identifying I. multifiliis serotypes using the nucleotide sequences. A composition (containing the i-antigen nucleotide) capable of eliciting an immune response in fish is useful for prophylaxis, treatment or for controlling I. multifiliis infection in fish. Polynucleotide or protein vaccines comprising a portion of the amplified product encoding an antigenic i-antigen polypeptide obtained is also useful for treating or preventing I. multifiliis infection in fish. Sequences AAA97036-A97042, and AAA97060, AAA97065 and AAA97089 represent i-antigen genes and gene fragments identified in the invention. Sequences AAA97043-A97064 (excluding AAA97060) and AAA97071-A97088 represent primers used in the isolation of the i-antigen gene sequences. Sequences AAB25859-B25889 and AAB25893-B25906 represent i-antigen protein and peptide sequences.

Sequence 72 AA;

Query Match	8.3%;	Score 212;	DB 21;	Length 72;	
Best Local Similarity	53.6%;	Pred. No. 7.7e-10;			
Matches 37;	Conservative 12;	Mismatches 20;	Indels 0;	Gaps 0;	
QY 382	CPAGTVLDTGTSYKQAAECVKAANFYTTKOTDMVAGIDTCTCNKKLTSGAENLNP	441			
Db 1	cpagtvldgtstnfvasatectksagffaskttgftagtdtctctkkltsgatakvy	60			
QY 442	ESAKKNIOC	450			
Db 61	aeatqkvqc	69			
RESULT 14					
ID AAB18144	standard; Protein; 1700 AA.				
XX AAB18144;					
AC 07-NOV-2000	(first entry)				
DT Plasmodium falciparum chromosome 2 related protein SEQ ID NO:1.					
DE Plasmodium falciparum; chromosome 2; human malaria parasite; vaccine;					
XX Plasmodium falciparum; chromosome 2; human malaria parasite; vaccine;					
KW antimalarial; malaria; protozoacide; infection; insecticide.					
XX Plasmodium falciparum.					
OS WO200025728-A2.					
XX 11-MAY-2000.					
XX 05-NOV-1999;	99WO-US26796.				
XX 05-NOV-1998;	98US-0107131.				
XX (HOFF/) HOFFMAN S.					
PA (CARU/) CARUCCI D.					
PA (GARD/) GARDNER M.					
PA (VENT/) VENTER J C.					
XX Hoffman S, Carucci D, Gardner M, Venter JC;					
PI WPI; 2000-365347/31.					
XX Proteins encoded by chromosome 2 of the human malarial parasite,					
XX Plasmodium falciparum, useful as antimalarial vaccines and in the					
XX diagnosis of P.falciparum infection -					
XX Disclosure; Page 29-33; 577pp; English.					
XX The present invention describes proteins and their fragments (I) encoded					
XX by chromosome 2 of the human malarial parasite, Plasmodium falciparum.					
XX Also described are: (I) nucleotide sequences (II) encoding (I); and (2)					
XX vaccines against P. falciparum infection comprising (I) or (II).					
XX (I) and (II) are useful for the development of vaccines against					
XX P. falciparum infection. (I) and polyclonal antisera or a monoclonal					
XX antibody raised to immunogens comprising the sequences of (I), are					
XX useful in the detection of infection with P. falciparum. Furthermore,					
XX (I) (especially when they are rifins or secreted or membrane proteins)					
XX can aid the identification of drugs to treat or prevent P. falciparum					
XX infection, or they can be used to identify drug resistance in					
XX P. falciparum. Sequencing of the Plasmodium chromosome 2 and the					
XX subsequent identification of proteins encoded by it will help to expand					
XX our understanding of parasite biology, a process hampered by the					
XX complexity of the parasitic lifecycle, and provide new targets for					
XX vaccine and drug development. Parasite resistance to drugs and mosquito					
XX resistance to insecticides have led to a resurgence of malaria in many					
XX parts of the world, and there is a pressing need for vaccines and new					
XX drugs. AAA70078 to AAA70287 and AAB18144 to AAB18352 represent nucleotide					
XX and protein sequences given in the present invention, but which are not					
XX specifically mentioned within the specification.					
SQ Sequence	1700 AA;				
Query Match	8.0%;	Score 203.5;	DB 21;	Length 1700;	
Best Local Similarity	27.2%;	Pred. No. 2.4e-07;			
Matches 114;	Conservative 10;	Mismatches 194;	Indels 101;	Gaps 20;	
QY 56	AAAFVFGASTCTPCPOKKDAGAPNPATANLVTCQNVKCPAGT-----AIAAG	104			
Db 603	aaacgatactac-----tgaattgcatggtgattgtcaaaagcaacatccaaatg	657			
QY 105	ATDYAALITTCVNCRLNFYNENAPNFNAGASTCTACPVNRVGGALTAGNAATIVACNVA	164			
Db 658	at-aacatctctga-----aggatcaac-----agaaaataatccatgcaaa	698			
QY 165	CPTGTALDDGVTVDYVRSFTECVKRLNFYNGNNGTFFNPCKSOCTPCPAIKPANVAQ	224			
Db 699	cttcaatatgatt--ataatactaa-----tgttactcatggttttggccaagagt	747			
QY 225	ATLGNDATITACQNVACPDGTISAAGVNNWVAQNTCTNCAPNFYNNAPNFNPGNSTCL	284			
Db 748	atccttgtaaacggacatagtagaacgtttttctctgatacag-----aaggagc-	796			
QY 285	PCPANKDYGAEATAGG-----AATLAKQCNACPDGTATIASGATNVYIQTCTC	338			
Db 797	acaat---gtgataagaaaaataaagataatagtgaaaggag-----cttgcgctccat	849			
QY 339	FYFDGNMFQAGSSRC---KACPANKVOG-----AVATAGGTATLIAOC-----ALECPA	384			
Db 850	-----atagacgattacatgtatgtagaaatttggaataatcaatgattata	900			
QY 385	GTVLDTGTTSTYKQAAECVKAANFYTTKOTDMVA--GIDTCTC-----CNKKLTSGA	436			
Db 901	gtaaaataataataaa--cataattattgtagaagtgctcttcgagccaaatatga	958			
RESULT 15					
ID AAB19802	standard; Protein; 1576 AA.				
XX AAB19802;					
XX 05-MAR-2001	(first entry)				
XX Human laminin 2 mature gamma-1 chain.					
XX Laminin 2; human; nerve regeneration; angiogenic; cell adhesion;					
KW degenerative muscle disorder; muscular dystrophy; cell therapy.					
XX Homo sapiens.					
XX WO2000066730-A2.					
XX 09-NOV-2000.					
XX 28-APR-2000;	2000WO-US11378.				
XX 30-APR-1999;	99US-0131720.				
XX 15-JUN-1999;	99US-0139198.				
XX 12-JUL-1999;	99US-0143289.				
XX 24-SEP-1999;	99US-0155945.				
XX (UYNE-) UNIV NEW JERSEY MEDICINE & DENTISTRY.					
XX Yurchenco P;					
XX WPI; 2000-687537/67.					
XX N-PSDB; AAA88902.					
XX Purified laminin 2 protein, useful for research and therapeutic					
XX purposes including peripheral nerve regeneration, treatment of					
XX degenerative muscle disorders, angiogenesis regulation, and ex vivo					
XX cell therapy -					

